RRRRR	RRRRRRR RRRRRRR RRRRRRR	UUU UUU UUU	UUU UUU	NNN NNN NNN		NNN NNN NNN	00000	00000 00000	FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	FFFFFFFFFFFFFFFFFFF	
RRR	RRR	UUU	UUU	NNN		NNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNN		NNN	000	000	FFF	FFF	
RRR	RRR	ŬŬŬ	ŬŬŬ	NNN		NNN	000	000	FFF	FFF	
RRR	RRR	ŬŬŬ	ŬŬŬ	NNNN		NNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNNN		NNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNNN		NNN	000	000	FFF	FFF	
	RRRRRRR	UUU	UUU	NNN	NNN	NNN	000	000	FFFFFFFFFF	FFFFFFFFFF	
	RRRRRRR	UUU	UUU	NNN		NNN	000	000	FFFFFFFFFF	FFFFFFFFFF	
	RRRRRRR	UUU	UUU	NNN		NNN	000	000	FFFFFFFFFF	FFFFFFFFFF	
RRR	RRR	UUU	UUU	NNN		INNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNN		INNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNN		INNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNN		NNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNN		NNN	000	000	FFF	FFF	
RRR	RRR	UUU	UUU	NNN		NNN	000	000	FFF	FFF	
RRR	RRR	UUUUUUUU		NNN		NNN		00000	FFF	FFF	
RRR	RRR	UUUUUUUU		NNN		NNH		00000	FFF	FFF	
RRR	RRR	UUUUUUUU	UUUUUUU	NNN		NNN	00000	00000	FFF	FFF	

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NN	DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD	XX	PPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPPP	000000 00 00 00 00	
RRRRRRRR RRRRRRRR PR RR RR RR RR RR RR RR RRRRRRR RR RR RR RR RR RR RR RR RR RR RR RR	EEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEEE	QQQQQQQ QQ QQ QQ QQ			

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Version:

'V04-000'

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FACILITY:

DSR (Digital Standard RUNOFF) /DSRPLUS DSRINDEX/INDEX Utility

ABSTRACT:

This file contains literals and macros defining the data structures found in the internal index pool

ENVIRONMENT:

Transportable

AUTHOR:

JPK

CREATION DATE: January 1982

MODIFIED BY:

003

JPK00015 04-Feb-1983

Cleaned up module names, modified revision history to conform with established standards. Updated copyright dates.

002

JPK00009 24-Jan-1983
Modified to enhance performance. The sort buckets have each been divided into 27 sub-buckets; 1 for each letter and 1 for non-alphas. Removed reference to BUCKET from INDEX. Definition of the structure was added to NDXPOL. References to BUCKET were changed in modules NDXOUT, NDXINI, NDXFMT and NDXDAT.

```
16-SEP-1984 16:55:41.95 Page 2
NDXPOL.REQ; 1
! Index entry
$FIELD XE_FIELDS =
     XESA_PREV
XESA_NEXT
XESA_SUBX
XESA_REF
XESA_TEXT
XESA_SORT_AS
XESH_SUBC
                                                                       Link to previous item
Link to next item
Sub index pointer
Reference pointer
Pointer to text of index item
Pointer to SORT_AS string
Sub index level
                                   = [$ADDRESS],
= [$ADDRESS],
= [$ADDRESS].
                                   = [$ADDRESS],
= [$ADDRESS],
= [$ADDRESS],
                                   = [$SHORT_INTEGER],
      XE$V_FLAGS
                                   = [$SHORT_INTEGER],
                                                                       ! Entry flags
            SOVERLAY (XESV_FLAGS)
            XE$V_BARS
                                               = [$BIT],
                                                                       ! Change bar flag
            $CONTINUE
      XESA_BOOK_LIST
                                   = [$ADDRESS]
                                                                       ! Master index book name list
      SALIGN (FULLWORD)
      TES:
LITERAL
      XE$K_LENGTH = $FIELD_SET_SIZE;
     $XE_BLOCK = BLOCK [XE$K_LENGTH] FIELD (XE_FIELDS) %;
! End of Index entry
! Reference entry
$FIELD XX_FIELDS =
     XX$A_LINK
XX$A_APPEND
XX$H_PAGE
                                   = [$ADDRESS],
= [$ADDRESS],
= [$SHORT_INTEGER],
                                                                         Link to additional entries
                                                                          APPEND text pointer
                                                                       ! Transaction number
      XX$V_FLAGS
                                   = [$SHORT_INTEGER],
                                                                       ! Display attributes
            SOVERLAY (XXSV_FLAGS)
           XX$V_BOLD
XX$V_UNDERLINE
XX$V_BEGIN
XX$V_END
                                 = [$BIT],
= [$BIT],
= [$BIT],
= [$BIT],
                                                                         Bold page reference
Underline page reference
                                                                          Begin page range
                                                                       ! End page range
            $CONTINUE
```

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16-SEP-1984 16:55:41.95 Page 3
NDXPOL.REQ:1
    XX$A_BOOK
                            = [$ADDRESS]
                                                       ! Master index book name
    SALIGN (FULLWORD)
    TES:
LITERAL
    XX$K_LENGTH = $FIELD_SET_SIZE;
MACRO
    $XX_BLOCK = BLOCK [XX$K_LENGTH] FIELD (XX_FIELDS) %;
! End of Reference entry
! Master index book reference entry
$FIELD XM_FIELDS =
    XMSA_LINK
                           = [$ADDRESS],
= [$ADDRESS]
                                                       ! Link to additional entries ! Pointer to book name
    XM$A_BOOK
    TES;
LITERAL
    XM$K_LENGTH = $FIELD_SET_SIZE;
MACRO
    $XM_BLOCK = BLOCK [XM$K_LENGTH] FIELD (XM_FIELDS) %;
! End of Master index book reference entry
! Current Entry
$FIELD C_FIELDS =
                           = [$ADDRESS].
= [$ADDRESS].
                                                       ! Pointer to current cell
! Pointer to previous cell
! Pointer to head of chain
    C$A_CURR
C$A_PREV
    CSA_HEAD
                            = [$ADDRESS].
    SALIGN (FULLWORD)
    C$V_FLAGS
                           = [$INTEGER].
                                                       ! Current cell flags
         SOVERLAY (CSV_FLAGS)
                                                       ! Identical string flag
         C$V_IDNS
                           = [$BIT]
         $CONTINUE
    TES:
```

NUM

```
16-SEP-1984 16:55:41.95 Page 4
NDXPOL.REQ; 1
LITERAL
      C$K_LENGTH = $FIELD_SET_SIZE;
      $C_BLOCK = BLOCK [C$K_LENGTH] FIELD (C_FIELDS) %;
! End of current entry
  Dummy datasets
LITERAL
     DS_X_ENTRY = XE$K_LENGTH,
DS_XX_ENTRY = XX$K_LENGTH,
DS_XM_ENTRY = XM$K_LENGTH,
DS_X_STRING = 0;
  Structure definition for bucket array.
            Buckets are arranged so that each row represents the first letter of the string and each column represents the second letter of the string.
            This approach is used only for master indexes as no performance improvement is realised until about 10 input files have been processed.
            Indexes which are not master indexes use only the first element of each row, i.e., [0, 0] ... [26, 0].
           The only exception is for nonalphabetic characters which use only element [0, 0]. Elements [0, 1] ... [0, 26] are not used since mapping all nonalphabetics into one row loses the sort order of the first
            character in the string. For nonalphabetics to work correctly in a two
            dimensional bucket scheme, the array would have to be at least 127 x 127
                  ** not used
                  A?
            26 Z? ZA . . . ZZ
STRUCTURE
      $BUCKET_ARRAY [ROW_IDX, COL_IDX; M, N] =
[M * N * %UPVAL] ($BUCKET_ARRAY + (ROW_IDX * N + COL_IDX) * %UPVAL);
!--
            End of NDXPOL.REQ
```

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